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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/801,497 | 03/08/2001 | Koji Furutani | 36856.445 | 8899 |

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EXAMINER

PHU, SANH D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2682 | 8 |

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,497

Applicant(s)

FURUTANI ET AL.

Examiner

Sanh D Phu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-7. 6) ☐ Other: ____

DETAILED ACTION

Information Disclosure Statement

1. The IDS filed 02/04/02,07/16/02,08/08/03,05/08/03,07/18/03 and 07/30/02 have been considered and recorded in the file.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 3/23/2000. It is noted, however, that applicant has not filed a certified copy of the 2000-082364 application as required by 35 U.S.C. 119(b).

Claim Objections

3. Claim 1 and 11 are objected to because of the following informalities:

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "automatic gain control circuit", as recited in the claims, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The

objection to the drawings will not be held in abeyance. Appropriate correction is required.

Claim Rejections – 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1–10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (6,633,748) in view of Chorey et al (6,154,664).

Regarding to claim 1 and 11, Watanabe et al (see col. 10, line 7 to col. 11, line 58, and col. 14 lines 36–56) discloses (see Fig. 5) a mobile communication device/dual band cellular phone having a plurality of communication systems (20X) supporting different frequency bands, comprising:

an antenna (1) (see col. 10, line 15);

a transmitter (Txd, Txg) for each of the plurality of communication systems (see col. 10, lines 20–30);

a receiver (Rxd, Rxg) for each of the plurality of communication systems (see col. 10, lines 20–30);

a diplexer (2) transmitting transmission signals from the plurality of communication systems to said antenna), and distributing reception signals received via said antenna to the plurality of communication systems (see col. 10, lines 30–40);

a high-frequency switch (3a, 4a) for each of the plurality of communication systems, arranged to switch the signals between said transmitter and said receiver (see col. 10, line 41 to col. 11, line 15).

Watanabe et al does not disclose a directional coupler and gain control circuit, as claimed

Chorey et al disclose (see Fig. 3B) a directional coupler (12) between a diplexer (19) and an antenna (2) extracting portions of the transmission signals, and sending the results to an automatic gain control circuit (8) (see col. 5, lines 1–8).

It would have been obvious for one skilled in the art to include in high frequency composite unit of Watanabe et al system with a directional coupler

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and an amplifier controller wherein the directional coupler places between a diplexer and an antenna in order to extract portions of RF signal to the amplifier controller (10) as taught by Chorey et al, so that the amplifier controller would control transmission power in Watanabe et al system

Regarding to claim 2 and 12, Watanabe et al in view of Chorey et al further teaches a high-frequency composite unit including a microwave circuit carrying the plurality of communication systems, wherein said high-frequency composite unit is defined by a multilayer substrate (see Watanabe, Fig. 2, col. 11, lines 61–63) including a laminated body including a plurality of dielectric layers (see Watanabe, Fig. 3(a)–3(h) and 4(a)–4(f), col. 12, lines 38–47), the multilayer substrate having a diplexer (see Watanabe, col. 11, line 61 to col. 12, line 6), a high-frequency switches (see Watanabe, col. 11, line 61 to col. 12, line 6), and a directional coupler (which is made by two adjacent microstrips) (see Chorey, col. 5, lines 50–67).

Regarding to claim 3 and 13 see Watanabe, Fig 5, 3(a)–3(h) and 4(a)–4(f), Watanabe et al in view of Chorey et al further teaches that a diplexer (2) includes an inductance element and a capacitance element (C11–15), a high-

frequency switch includes a switching element (p21d, p21g), an inductance element (L21d, L22d, L23d, L21g, L22g, L23g), and a capacitance element (C21d, C22d, C23d, C21g, C22g, C23g) (see Watanabe, col. 10, line 41 to col. 11, line 3), and a directional coupler (12) (see Chorey, Fig.3B) includes a primary line (20) and a secondary line (CS), the multilayer substrate includes the switching element, the inductance element, the capacitance element, the primary line, and the secondary line, and the multilayer substrate includes a connector connecting the switching element, the inductance element, the capacitance element, the primary line, and the secondary line (see Chorey, col. 5, lines 44–67).

Regarding to claim 4 and 14, Watanabe et al in view of Chorey et al further teaches high-frequency filters, which are being arranged subsequent to high-frequency switches and being connected to receivers (see Watanabe, col. 10, lines 20–29).

Regarding to claim 5 and 15, Watanabe et al in view of Chorey et al further teaches that said high-frequency composite unit includes a multilayer substrate having a laminated body defined by a plurality of dielectric layers, the

multilayer substrate having said diplexer, a high-frequency switches (see Watanabe, col. 10, line 8 to col. 11, line 3), and a directional coupler (see Chorey, Col. 5, lines 44–67).

Regarding to claim 6 and 16 (see Watanabe Fig. 5), Watanabe et al in view of Chorey et al further teaches that said diplexer includes an inductance element (L11, L12) and a capacitance element (C11–C15) (see Watanabe, col. 10, lines 30–36), said high-frequency switch (3a, 4a) includes a switching element (p21d, p21g), an inductance element (L21d, L22d, L23d, L21g, L22g, L23g), and a capacitance element (C21d, C22d, C23d, C21g, C22g, C23g) (see Watanabe, col. 10, line 41 to col. 11, line 3), and said directional coupler (12) (see Chorey, Fig. 3B) includes a primary line (20) and a secondary line (CS), the multilayer substrate includes the switching element, the inductance element, the capacitance element, the primary line, and the secondary line, and the multilayer substrate further includes a connector connecting the switching element, the inductance element, the capacitance element, the primary line, and the secondary line (see Chorey, col. 5, lines 44–67).

Regarding to claim 7 and 17, Watanabe et al in view of Chorey et al further teaches that said plurality of communication systems include DCS and GSM systems (see Watanabe, col. 10, lines 15–19).

Regarding to claim 8 and 18, Watanabe et al in view of Chorey et al further teaches that a notch filter is provided between said transmitters and said high–frequency switches (see Watanabe, col. 10, lines 20–29).

Regarding to claim 9 and 19, Watanabe et al in view of Chorey et al further teaches that a directional coupler includes a port (see Chorey, col. 5. lines 44–45)

Regarding to claim 10 and 20, Watanabe et al in view of Chorey et al further teaches that said diplexer includes inductance elements and capacitors (see Watanabe, col. 10, lines 30–33).

Conclusion

5. References Metero (6215988), Shapiro et al (5973568), Jensen (6216012) are additionally cited because they are pertinent to the claimed invention.

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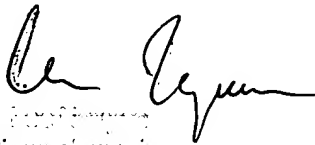
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanh D Phu whose telephone number is (703) 305-8635. The examiner can normally be reached on 8:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 703-301-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-8635.

Sanh D. Phu
Examiner
Art Unit 2682

SP



Sanh D. Phu
Examiner
Art Unit 2682